



European  
Commission

## Clean energy for all



# THE REVISED RENEWABLE ENERGY DIRECTIVE

## The revised Renewable energy Directive at a glance

The European Commission adopts today a revised Renewable Energy Directive. The provisions are adapting the framework for renewable energy development to the 2030 perspective, provide certainty and predictability to investors and address the potential of renewable energy in a number of sectors.

The proposal identifies **six key areas for action**:

1. Creating an enabling framework for further deployment of renewables in the **Electricity Sector**;
2. Mainstreaming renewables in the **Heating and Cooling Sector**;
3. Decarbonising and diversifying the **Transport Sector**;
4. Empowering and informing **consumers**;
5. Strengthening the **EU sustainability criteria for bioenergy**;
6. Making sure the EU level **binding target** is achieved on time and in a cost effective way.

## All changes in detail

### 1. Creating an enabling framework for the deployment of renewables in the Electricity Sector

**By 2030, half of European electricity should be renewable.** The share of renewable electricity has already increased up to 29%, and accounts for over 85% of Europe's generation investments. The dramatic cost reduction of renewable power technologies (solar modules and wind technology prices have declined respectively by 80% and 30-40% between 2009 and 2015<sup>1</sup>), and the expected further cost reductions will bring additional cost-competitive capacity in the system. A further increase of renewables will make the electricity sector more inclusive, more diverse and more secure. In this context, the approach to renewables deployment should be increasingly market-based, untapped technological and geographical potentials need to be exploited, innovation must continue and investors must be provided with certainty and visibility. All this elements will contribute to the cost-effective deployment of renewable energy.

The revised directive:

- **includes general principles that Member States should follow when designing support schemes. While providing visibility and certainty to investors, support schemes must be cost-effective and market oriented.** The aim is to ensure their stability, bring down the costs of deploying renewables and further Europeanise renewables policy;

1. IRENA (2016). *The Power to Change: Solar and Wind Cost Reduction Potential to 2025*.

- **simplifies administrative procedures and reinforces local acceptance of projects** through:

- a one-stop-shop and a time limit for the Renewable Energy Sources (RES) permit granting process (similarly to TEN-E Regulation);
- a simple notification procedure to facilitate repowering of existing renewables plants and small scale projects.

## 2. Mainstreaming renewables in the Heating and Cooling Sector

**Heating and cooling accounts for 50% of total energy demand in Europe.** Despite promising signals and the fact that the EU is the world leader in renewable heat<sup>2</sup>, the uptake of renewables in this sector has been slow: today 75% heating and cooling still relies on fossil fuels, and accounts for 68% of the EU's gas imports, which translates into an EU annual bill of €44 bn<sup>3</sup>. On top of that, the lack of an EU level policy on renewable heating and cooling has led to fragmented markets across Europe and reduced investors' certainty. Yet, renewable heating has shown to substantially reduce costs in several district heating and cooling systems.

The revised directive:

- provides Member States with **options to increase their share of renewable energy in heating and cooling supply**, aiming at increasing the share of renewable energy by 1 percentage point per year in their total supply until 2030;
- **opens access rights to local district heating and cooling systems** for producers of renewables, under certain conditions.

## 3. Decarbonising the Transport Sector in a sustainable way

Despite significant growth of renewable fuels since 2009 and EU's leadership role as the largest producer of advanced biofuels<sup>4</sup>, the transport in the EU still depends on 94% oil supplies to fuel European cars, tracks, ships and planes. In order to foster the decarbonisation and energy diversification of the EU transport sector, the revised renewable energy Directive:

- Introduces an **obligation on European transport fuel** suppliers to provide an increasing share of **renewable and low-carbon fuels**, including advanced biofuels, renewable transport fuels of non-biological origin (e.g. hydrogen), waste-based fuels and renewable electricity. The level of this obligation is progressively increasing from 1.5% in 2021 (in energy terms) to 6.8 % in 2030, including at least 3.6% of advanced biofuels. Preferential rules apply to advanced aviation fuels in order to support their deployment in the aviation sector (e.g. their energy content is accounted 20% more).
- To minimize the Indirect Land-Use Change (ILUC) impacts, introduces a cap on the contribution of food-based biofuels towards the EU renewable energy target, starting at 7% in 2021 and going down progressively to 3.8% in 2030.
- Introduces **national databases** to ensure traceability of the fuels and mitigate the risk of fraud.

## 4. Empowering and informing consumers

**Consumers are the drivers of the energy transition.** The recent cost-reduction in renewable energy technologies is enabling consumers to increasingly produce their own renewable energy. In the

2. International Energy Agency (2016). *Renewable Energy Medium-Term Market Report. Market analysis and Forecasts to 2021.*

3. based on 2015 prices and imports, ESTAT

4. International Renewable Energy Agency (2016). *Innovation Outlook: Advanced Liquid Biofuels.*

EU, this is evident in the rise of innovative schemes that allow home owners, tenants, local communities and cities to invest in, generate, share, consume and store their own energy. Consumers, municipalities and private companies are increasingly committing to becoming 100% renewables. New technologies like smart grids, smart homes and battery storage solutions make it increasingly possible for energy consumers to become active players on the market. With the revised directive, **consumers will benefit from stronger rights as it:**

- **enables consumers to self-consume** renewable electricity without facing undue restrictions, and ensure that they are remunerated for the electricity they feed into the grid;
- **recognizes energy communities** and facilitates their participation in the market;
- **provides information** on energy performance and energy sources of district heating and cooling systems;
- improves the quality of information provided to consumers by **consolidating the functioning of the Guarantees of Origin (GOs) system**. It also extends the system to renewable gas and makes it mandatory for the disclosure of renewable electricity.

## 5. Strengthening the EU sustainability criteria

The Commission is committed to making sure the biomass we use in the Union for energy is sustainable, i.e. that it:

- delivers high **greenhouse gas (GHG) savings** compared to fossil fuels,
- is produced in a way that **does not cause deforestation or degradation** of habitats or loss of biodiversity,
- is converted into energy with **a high efficiency**, in order to promote efficient use of limited resources and avoid unintended impacts on other uses.

This is why the revised Renewable Energy Directive strengthens the existing EU criteria for bioenergy sustainability and extends them to cover also biomass and biogas for heat and power. More specifically, the Directive includes the following 4 new requirements:

- The **sustainability criteria for biofuels are improved**, including by requiring that (new) advanced biofuels emit at least 70% fewer GHG emissions than fossil fuels.
- A new **sustainability criterion on forest biomass** is introduced, in order to ensure that the production of woodfuel continues to be sustainable and that any LULUCF emissions are accounted for (in the country of biomass production).
- The EU sustainability criteria are extended to cover **solid biomass and biogas used in large heat and power plants** (above 20 MW fuel capacity). This means, for instance, that electricity and heat from biomass have to produce at least 80% fewer GHG emission compared to fossil fuels by 2021 and 85% less by 2026.
- Large-scale biomass electricity plants (above 20 MW) will need to **use high efficient combined heat and power technology** (reaching efficiencies above 80%). This requirement does not apply to power plants that are already in operation and receive state aid already approved by the Commission. In addition, this criterion does not apply in case of risks to the security of electricity supply, which need to be duly notified to and approved by the Commission.

## 6. Making sure the EU binding target is achieved on time

In the absence of Member States binding targets (as it was the case in the previous renewable energy Directive), one of the key challenges of the post-2020 energy framework is to ensure that the 2030 target is collectively met in a cost efficient-way while

avoiding a disproportionate burden on some Member States. Therefore, the **2020 national targets will be established as baseline** to build on the progress achieved with the current framework. Member States will not be allowed to go below their 2020 targets from 2021 onwards.

This will complement the measures proposed for electricity, transport and heating and cooling sectors. **Specific measures to close any possible gaps to the achievement of the renewables target** will be introduced by the Energy Union Governance. This will apply in case progress towards the 27% target is insufficient, at Member States or at EU level.

## The importance of legislation in renewable energy

Energy is a strategic sector with a great potential for jobs and growth, and a key pillar for the economy and employment. The energy sector alone employs close to 2.2 million people, spread over 90.000 enterprises across Europe, representing 2% of total added value. Energy is also affecting the whole population, representing on average 6% of annual household expenditure

The Renewable Energy Directive<sup>5</sup>, with its binding 20% renewable target for 2020, broken down into national targets, is a core element of the 2009 EU climate and energy package.

The renewable energy targets are also part of Europe 2020 strategy for growth, in particular of its flagship initiative for a resource-efficient Europe, given their contribution to innovation, growth, jobs and security of energy supply. Furthermore, the Directive is the central EU level instrument to “promote the development of new and renewable forms of energy” as stipulated in

Art 194(1)(c) TFEU. Renewable energy is currently the only decarbonisation option in the power sector which is being deployed at a rate that is close to what is required under long-term scenarios of the International Energy Agency (IEA) to attain the 2°C target.<sup>6</sup>

The 2009 RES Directive has **effectively** ensured that almost all Member States are currently on track for achieving their 2020 targets, thus improving the pre-existing situation where only few Member States had achieved their indicative trajectories for renewable electricity and transport. First estimated data show that the share of renewable energy sources (RES) in the EU increased by around 7% points between 2007 and 2015 (i.e. from 10.4% to 17%)<sup>7</sup>. The 2009 RES Directive has, alongside additional national RES policies, spurred European-led global investment and technology cost reductions that were unimaginable still a few years ago. RES investments have been surpassing conventional energy investments for the first time in 2014<sup>8</sup>. The **relevance** of the Renewable Energy Directive for reaching the greenhouse gas (GHG) reduction targets is backed-up by evidence, as already mentioned. The increase in the use of renewable energy resulted in approximately 380 Mt of gross avoided CO<sub>2</sub> emissions at EU level in 2014. This amount is comparable to the GHG emissions of Poland. As energy efficiency improves – another key dimension of the EU’s decarbonisation efforts –, the growing share of renewables results in a progressively larger displacement of non-renewable energy sources.

Moreover, **the benefits of renewables** go well beyond GHG reduction and include enhanced security of supply, more innovation, jobs and growth. For example, avoided imported fuel costs due to increasing use of renewable energy amount to around €20 billion a year for the EU as a whole<sup>9</sup>. By 2030, this figure might rise to around €60 billion<sup>10</sup>. This makes renewable energy a key delivery

5. Directive 2009/28/EC on the promotion of the use of energy from renewable sources (Renewable Energy Directive), OJ L 140, 5.6.2009

6. System Integration of Renewables – Implications for Electricity Security. Report to the G7, OECD/IEA, 2016, available here.

7. Reference year used in 2007 model runs for the 2008 IA for the 2009 Climate and energy package. Data: EUROSTAT and 2015 estimates (“Draft Renewable Energy Progress Report”, Öko Institut [to be published]. draft preliminary figure).

8. World Energy Investment Outlook (IEA, 2014)

9. «Interim Renewable Energy Progress Report», Öko Institut, 2016. 2014 figures

10. “Draft Renewable Energy Progress Report”, Öko Institute [to be published]. draft preliminary figure

tool for several dimensions of the Energy Union Strategy. The sector also remains key to EU objectives to sustain and improve growth, employment and competitiveness. The EU renewable energy industry employed in 2014 over 1 million workers, and European companies held 30% of all patents for renewable technologies globally in 2013.

The clearer legal framework provided by the revised directive will remove uncertainties for investors, reduce administrative burdens and decrease costs. This will **bring benefits for both producers and investors**: renewable energy technology suppliers will maintain a leadership role; costs of renewables supply chains will be reduced.

Finally, the RES Directive (together with other parts of 2009 climate and energy package) and the EU global leadership role on renewable energy contributed to the global spill-over of renewable energy policies. In 2015, at least 173 countries had adopted renewable energy targets (not considering the intended nationally determined contributions prior to COP21), and an estimated 146 countries had renewable energy support policies<sup>11</sup>.

## The role of renewables in the clean energy transition strategy

The preparation of the revised renewable energy Directive has been done in close coordination with, and is complementary to, other related Commission initiatives. First and foremost, this includes the Market Design and Energy Union Governance proposals but also the revision of the Energy Efficiency and Energy Performance of Buildings Directives, the EU ETS and the Effort Sharing Regulation, the LULUCF Regulation and the Bioenergy Sustainability Policy.

These other pieces of legislation mutually complement the revised Directive. They will contribute to enable the EU to reach, collectively, a share of at least 27 % in the final energy consumption by 2030 in a cost effective way and to deliver on the EU political priority of becoming the world's number one in renewables.

The **Market Design initiative** will, *inter alia*, facilitate the development of an electricity market fit for renewable energies, where short term markets are fully developed and integrated and flexibility plays a key role in enhancing the market value of renewables. This enhanced electricity market design, together with the strengthened EU ETS, will be a key foundation of the 2030 framework and will ensure that renewable energy generators can earn a higher fraction of their revenues from the energy markets. The revision of the Renewables Directive will build on this approach and complement it by introducing various measures aimed at attracting the necessary investments cost-efficiently and in a timely manner.

The **Energy Union Governance** frames the Integrated National Energy and Climate Plans, which set out national contributions to the legally binding EU-level RES target. The Energy Union Governance foresees an iterative process between the Commission and Member States to ensure ambitious and reliable National Plans including in renewable energy and also proposes different options for concrete measures to fill a potential gap either on ambition or delivery of the EU renewables target. At the same time, the Governance Regulation streamlines and integrates the existing planning, reporting and monitoring obligations of the energy acquis including those for renewable energy post 2020.

The **Energy Efficiency Directive (EED)** and **Energy Performance for Buildings Directive (EPBD)** aim, respectively, at facilitating the achievement of the

11. Renewables 2016 - Global Status Report, REN21, 2016.

energy efficiency target and at enhancing the energy performance of buildings. The provisions in the heating and cooling section are consistent with and complement the measures in both the EED and the EPBD, in particular by tackling existing buildings, tertiary and industry, as well as by including specific requirements on renewables.

The **EU Emission Trading Scheme (EU ETS)** will be reformed for the period after 2020<sup>12</sup>. Existing legislation includes the Market Stability Reserve to address the current surplus of allowances and to improve the ETS resilience to major shocks by adjusting the supply of allowances to be auctioned. The strengthened EU ETS will play an increasing role in providing a stronger investment signal for lower carbon technologies, including renewables, and will ensure that synergies between renewable energy and climate policies are better exploited. Furthermore, the proposed **Effort Sharing Regulation**<sup>13</sup> makes proposals for setting national binding emission reduction targets for greenhouse gases for the sectors outside the EU ETS and on Land Use, Land Use Change and Forestry (LULUCF).

The **LULUCF Regulation** aims at integrating carbon emissions credits and debits from agriculture and forestry into the EU 2030 climate and energy framework. The reinforced EU sustainability criteria will provide further assurance that bioenergy used in the EU continues to contribute to climate change mitigation, while minimizes the risk of unintended biodiversity impacts due to biomass production.

12. COM(2015)337 final - Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments

13. COM(2016)482 final - Proposal for a Regulation of the European Parliament and of the Council on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement and amending Regulation No 525/2013 of the European Parliament and the Council on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change